

General

Title

Infection control after hematopoietic cell transplantation (HCT): percentage of patients who were expected to be neutropenic for 7 or more days during HCT and were prescribed antibacterial prophylaxis with a fluoroquinolone.

Source(s)

Proposed infection control after HCT measure set: questionnaire, patient selection, measures with specifications, glossary. Arlington Heights (IL): American Society for Blood and Marrow Transplantation; 20 p.

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Process

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of patients greater than or equal to 18 years of age who were expected to be neutropenic for 7 or more days during hematopoietic cell transplantation (HCT) and were prescribed antibacterial prophylaxis with a fluoroquinolone.

Rationale

In the past decade, modifications in hematopoietic cell transplantation (HCT) management and supportive care have resulted in changes in recommendations for the prevention of infection in HCT patients. These changes are fueled by new antimicrobial agents, increased knowledge of immune reconstitution, and expanded conditioning regimens and patient populations eligible for HCT. Despite these advances, infection is reported as the primary cause of death in 8% of autologous HCT patients and 17% to 20% of allogeneic HCT recipients.

Support (verbatim) from guidelines: Antibacterial prophylaxis with a fluoroquinolone (i.e., levofloxacin) to prevent bacterial infections should be strongly considered for adult HCT patients with anticipated neutropenic periods of 7 days or more. Antibacterial prophylaxis is generally started at the time of stem cell infusion and continued until recovery from neutropenia or initiation of empirical antibacterial therapy for fever during neutropenia. The prophylaxis should not be continued after recovery from neutropenia. Local epidemiological data should be carefully considered

before applying fluoroquinolone prophylaxis, and once it is applied, the emergence of resistance in bacterial pathogens should be monitored closely because of increasing quinolone resistance worldwide among Gram-negative bacteria (e.g., *Escherichia coli*, *Klebsiella pneumoniae*, and *Pseudomonas aeruginosa*) and staphylococci; plasmid-mediated quinolone resistance in Enterobacteriaceae that is closely related to the beta lactamases that inactivate third-generation cephalosporins; and quinolone-related development of a hypervirulent strain of *Clostridium difficile*.

Note on pediatrics: Because of lack of data, there are currently no antimicrobial prophylactic regimens that can be recommended for children. Some experts use levofloxacin for pediatric antibacterial prophylaxis.

Statement (verbatim) from guidelines on gap: Significant changes in the field of HCT since the publication of the original guidelines necessitated this update. These changes include new antimicrobial agents, broader use of reduced-intensity conditioning (RIC), the increasing age of HCT recipients, and more frequent use of alternative donor stem cell sources such as haploidentical donors and umbilical cord blood. Furthermore, as with any field of medicine, published studies continue to add to the evidence regarding supportive medical care. Despite—or perhaps because of—these changes, infections still occur with increased frequency or severity among HCT recipients as a patient population.

Statement from the American Society for Blood and Marrow Transplantation (ASBMT) Task Force on gap: Fluoroquinolone for bacterial infection prophylaxis is new to the 2009 guidelines from the prior 2000 guidelines. For this reason, we believe there is a significant gap in adoption of this therapy.

Evidence for Rationale

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Primary Health Components

Hematopoietic cell transplantation (HCT); neutropenia; antibacterial prophylaxis; fluoroquinolone

Denominator Description

The number of patients in your selection having hematopoietic cell transplantation (HCT) AND expected to be neutropenic for 7 or more days (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

The number of patients in your selection having hematopoietic cell transplantation (HCT) AND expected to be neutropenic for 7 or more days AND were prescribed fluoroquinolone (see the related "Numerator Inclusions/Exclusions" field)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and organizational sciences

A systematic review of the clinical research literature (e.g., Cochrane Review)

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Unspecified

Extent of Measure Testing

The Infection Control (IC) measure set was developed by the American Society for Blood and Marrow Transplantation (ASBMT) using a rigorous methodology (adapted from the American Medical Association's Physician Consortium for Performance Improvement [AMA-PCPI] and including field testing) and adapted for use in Practice Improvement Modules (PIMs) by the American Board of Internal Medicine (ABIM).

Evidence for Extent of Measure Testing

Joseph TL. (Executive Director, American Society for Blood and Marrow Transplantation). Personal communication. 2013 Jan 21. 1 p.

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Ambulatory/Office-based Care

Hospital Inpatient

Hospital Outpatient

Intensive Care Units

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Clinical Practice or Public Health Sites

Statement of Acceptable Minimum Sample Size

Specified

Target Population Age

Age greater than or equal to 18 years

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Making Care Safer

Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Living with Illness

IOM Domain

Effectiveness

Safety

Data Collection for the Measure

Case Finding Period

12 months

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Clinical Condition

Encounter

Therapeutic Intervention

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions

The number of patients in your selection having hematopoietic cell transplantation (HCT) AND expected to be neutropenic for 7 or more days

Note: Patients can be included in the chart abstraction if:

- They have been seen by the practice within the past 12 months; and
- Management decisions regarding care are made primarily by providers in the practice.

Select at least 25 of your patients who have had HCT. Refer to the original measure documentation for administrative codes.

Exclusions

Patients less than 18 years old

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions

The number of patients in your selection having hematopoietic cell transplantation (HCT) AND expected to be neutropenic for 7 or more days AND were prescribed fluoroquinolone

Note: This requires documentation in the patient's medical record that fluoroquinolone therapy was prescribed as described in the guidelines (see the original measure documentation for details).

Exclusions

None

Numerator Search Strategy

Fixed time period or point in time

Data Source

Administrative clinical data

Paper medical record

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

Unspecified

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a higher score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

Patients who were expected to be neutropenic for 7 or more days during HCT and were prescribed antibacterial prophylaxis with a fluoroquinolone.

Measure Collection Name

Infection Control after Hematopoietic Cell Transplantation Measure Set

Submitter

American Society for Blood and Marrow Transplantation - Professional Association

Developer

Funding Source(s)

American Society for Blood and Marrow Transplantation

Composition of the Group that Developed the Measure

The American Society for Blood and Marrow Transplantation (ASBMT) Education Practice Improvement Modules Task Force:

- Linda Burns, MD (*chair*)
- Stephan A Grupp, MD, PhD
- Mark B Juckett, MD
- Vivek Roy, MD
- Edward Agura, MD
- Miguel-Angel Perales, MD
- Thomas Joseph, MPS, CAE, ASBMT Executive Director
- Sue Frechette, BSN, MBA Consultant

Financial Disclosures/Other Potential Conflicts of Interest

Conflicts, if any, are disclosed in accordance with the American Society for Blood and Marrow Transplantation (ASBMT) conflict of interest policy.

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2012 Apr

Measure Maintenance

Unspecified

Date of Next Anticipated Revision

Unspecified

Measure Status

This is the current release of the measure.

The measure developer reaffirmed the currency of this measure in February 2017.

Measure Availability

Source not available electronically.

For more information, contact the American Society for Blood and Marrow Transplantation (ASBMT) at 85 W. Algonquin Road, Suite 550, Arlington Heights, IL 60005; Phone: 847-427-0224; Fax: 847-427-9656; Web site: www.asbmt.org; E-mail: mail@asbmt.org.

NQMC Status

This NQMC summary was completed by ECRI Institute on September 24, 2013. The information was verified by the measure developer on October 25, 2013.

The information was reaffirmed by the measure developer on February 8, 2017.

Copyright Statement

This NQMC summary is based on the original measure, which is subject to the measure developer's copyright restrictions.

Production

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